Chapter - 2

(Paper - I)

Research Methods

I.

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* Grounded Theory — (20)
  - (reverse engg.)
  - Qualitative Research Tool

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Observation Method

(regulated perception)

- controlled observation
- uncontrolled observation

→ collect the facts without any distortion with max. precision and min. bias.

→ involves perception of the event of interest & collection of relevant data with max. possible precision and accuracy.

→ Pauline Young :- deliberate study through the eye.

*Controlled Observation → Lab Experiment
→ Field experiment

→ In controlled Obs → extraneous variables (controlled)
Dependent " (measured)
Independent " (manipulated)

*Extraneous variables → Those variables which can impact the outcome but have not been chosen for manipulation.

* Those variables chosen for manipulation → Independent Variable

*Stimulus → Ind. Variable

* Response → Dependent "

* Extraneous also called ~~or~~ intraneous variables (when inside the organism involved)
↳ (analogous to noise in the field of communication)
↳ it can be introduced at sender, receiver or intermediate level.

* Experiment within the confines of a lab (Lab Exp.)
Adv.
↳ rigorous control over Extraneous Variable

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(ii) Manipulation of IV more accurate
(iii) Measurement of DV more objective
⇒ Cause-effect relationship established [IV —— DV]
*Disadvantage is introduction of artificiality.

*Field Experiment
↳ experiment is done in the setting that resembles natural settings.
→ This reduces artificiality but control of EV, & IV manipulation & DV measurement will be hampered.
→ Creation of the settings is a tough task.

*Uncontrolled Observation
↳ (i) Sometimes for ethical & social reasons, controlled observation is not possible.
(ii) Sometimes IV occur much prior to producing their effects.

They are of 2 types:
1. without intervention → Naturalistic observation
2. with intervention → Disguised & Undisguised Participant Observation Method (POM)

* IV → not manipulated
* EV → not controlled
* DV → measurement difficult & subjective.

Thus, cause-effect established is speculative (not definite)

⇒ Naturalistic observation :- ~~ees~~ unobstrusive
[~~ees~~ observer cannot obstruct behaviour] → Highest level of natural beh. & least artificiality.
→ Observer has to wait for the behaviour to occur.
→ entire behaviour might not be recorded at once
↳ More patience required.

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* With intervention

- Malinowski → studied Trobriand Islanders (Disguised POM)

↳ Some scholars believe that there is nothing like undisguised POM

→ Undisguised POM will compromise behaviour to some degree

* Before Malinowski, anthropologists relied on data given to them by informants.

→ informants might not give correct information.

Disguised POM → (i) Time, cost & Labour Intensive (TCLI)

(ii) Unbiased study becomes difficult as researcher might be emotionally involved.

(iii) Social reasons might make the researcher biased.

* Objectivity of POM is more than naturalistic method but less than experimental method.

*(Mostly Naturalistic Obs. is aked)

Experimental Method

→ **Definition** :- Controlled observation

→ **Procedure** :- IV → Manipulation
EV → Control
DV → Measurement

→ **Experimental Designs**

→ **Types** → Lab
→ Field
} Adv. & Disadv.

→ Threats to internal & external validity → (i) experimenter's bias
(ii) Demand characteristics

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* Definite Cause-Effect Relationship can be arrived at

*An experiment is controlled observation of an event. In an experiment certain conditions are arranged for the purpose of careful assimilation, manipulation & careful inference drawing. Doing an experiment allows the researcher to draw causal inference about the behaviour & the experimental hypothesis. He tries to arrive at a potential relationship bet. two variables (i) IV & (ii) DV.

* What is a variable?

Ans= A variable is anything which varies quantitatively & can be measured. Independent variable refers to event or condition taken up by the experimenter for manipulation in order to see what effects they produce on behaviour. It is ~~independent~~ independent in the sense that its values are created by the experimenter & are not influenced by anything else in the exp.

* Extraneous varibles :- These variables confound IV-DV relationship. They are not the part of experimental manipulation & need to be controlled because they have the capacity to influence the dependent variable or behaviour. If they are not controlled IV-DV relationship will get contaminated.

* Dependent variable :- They are the outcome of manipulation of IV. They are called as 'dependent variable' because there value is dependent upon Independent variable. In other words, they are the outcome of IV manipulation.

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* Success of experimental method depends upon:

(i) How effectively can the experimenter control EV

(ii) How precisely can he manipulate IV

(iii) How objectively can he measure DV

*Experimental design is the general structure of the experiment. It is a plan for assigning the participants to experimental conditions and the statistical analysis associated with the plan. Exp. design identifies IV, DV & EV and indicates the way in which randomisation & statistical aspects of the experiment are to be carried out. Exp. Design therefore is a blueprint for carrying out experimental research. Fischer has identified 3 principles of a good experimental design:

(i) randomisation

↳ participants or the experimental units should be randomly assigned to the treatment level it helps to distribute idiosyncratic characteristic (typical to that person) of the participants over the diff. treatment levels so that they don't selectively bias the outcome of the experiment.

(ii) Replication

It is the observation of 2 or more participants under identical experimental conditions. It enables the researcher to obtain more precise estimate of treatment effect.

(iii) Blocking

It is an experimental procedure for isolating variation attributable to the nuisance variables.

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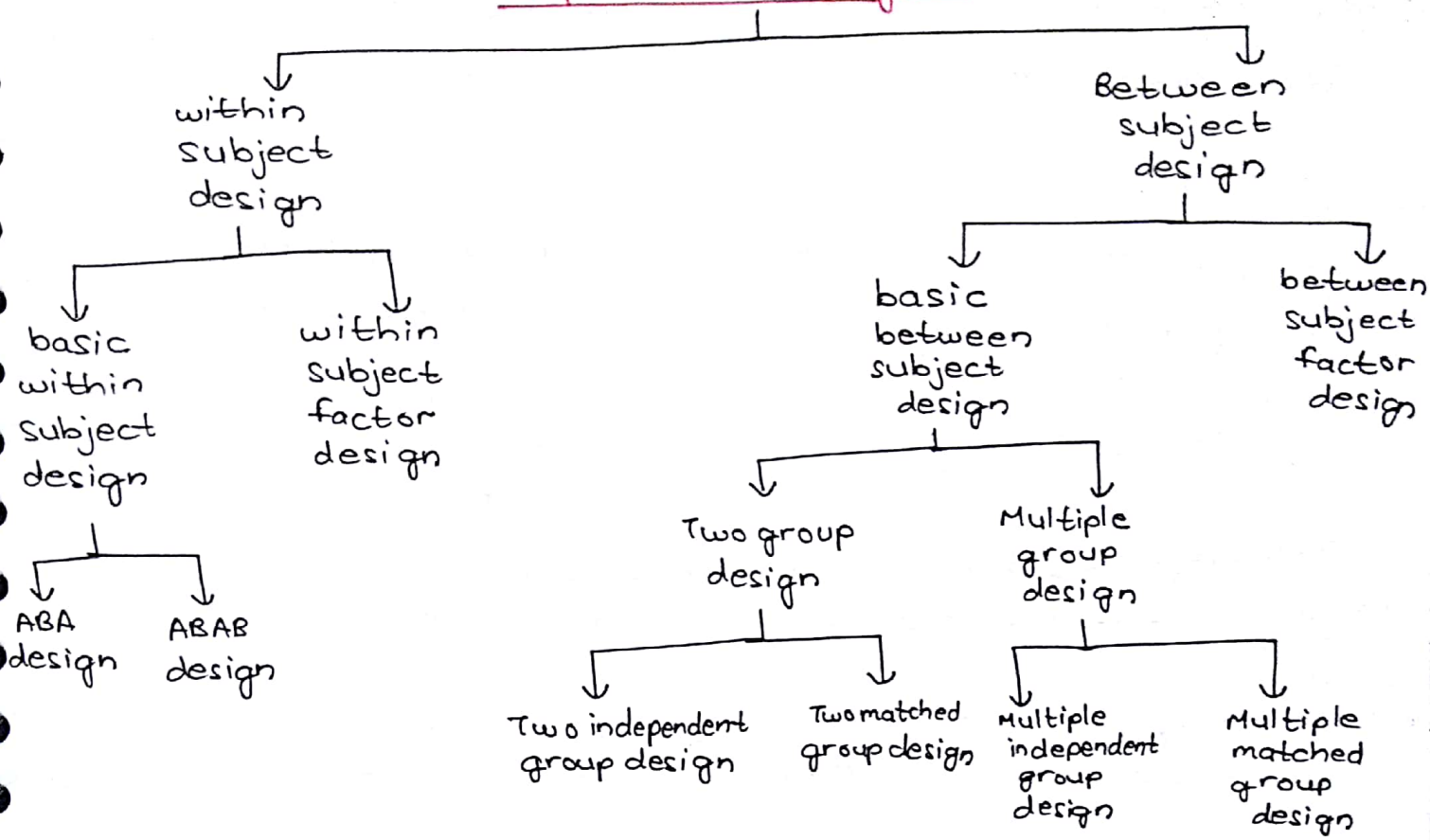
Experimental Designs



* No. of subjects available for participation in the experiment.

* within SD :- Subject is part of experimental group & also of control group.

* bet. SD :- subjects part of exp. group, are not part of control group.
(min. 1 more person req. than the experimental group)

* Subject → base line behaviour measured [A]

⇒ Then, subject's behaviour after administration of IV measured. [B]

⇒ Allow influence of IV to end (- IV) ⇒ Again measure behaviour of subject [A]

⇒ Behaviour compared in A B A

⇒ There is a change in behaviour which comes back to normal (base behaviour) → once IV is removed

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Adv:

⇒ No need to control the organismic variables as they are present at all stages & hence nullified.

⇒ With single subject, experiment can be conducted.

Disadvantages

(i) Fatigue of the subject (non-cooperation, attrition of subjects)

(ii) If IV is irreversible, subject will not go to base line behaviour. → only AB (This is pre-experimental design & not experimental design)

* In between ED, if not same, the similar subjects are required in experimental & control group.

* In withing, more than 1 subject also possible → but all of them will be parts of both exp. & control groups.

*In ABAB → again IV is administered

↳ This further enhances the chances of facing the disadvantages.

*Factor design

↳ more than one IV administered simultaneously

↳ this includes the interactive effect of the IVs

* Basic between SD

- Exp. group → $E_1, E_2 \ldots E_n$ (IV administered)
- Control group → $C_1, C_2 \ldots C_n$ (placebo given)

} → behaviour measured & compared

* Both the groups should be nearly equal or atleast comparable.

*In two-group design only 2 groups.

* In multiple group design

Exp. group1
Exp. groupn
control group
} many exp. groups

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*High concentration of IV, med. concentration & low concentration to various Experimental groups. [graded administration of single IV]

→ One control group is enough

⇒ Making all individuals of diff. groups equal or similar is a very difficult task.

In factor design → to the experimental group multiple IVs administered simultaneously

* In within design, subjects will act as their own control group.

* Independent & Matched

Q1) Discuss the ways to control EV in an experiment.

Q2) What is the relevance of EV in social science research.

Ans c1)

1) Randomisation
2) Matching
3) Elimination
4) constancy of condition
5) counterbalancing

*Randomisation is TCL Effective

↳most practical

↳high chances of Exp. & control group being comparable but this is not guaranteed.

→ Ideal method is matching

* conduct a pre-test

↳based on the results assign people to diff. groups

⇒ But, (i) it is TCLI.

(ii) fatigue

(iii) Some carryover as one kind of testing might give some practice for another test.

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* Elimination

eg. noise can be removed by conducting exp. in sound proof room

* Constancy of condition

↳ conditions of all experimental groups & control groups should be same, if the variable cannot be removed
eg. light intensity

* Counterbalancing

↳ sequence relevant variables (order of administering IVs)

⇒ order of presenting IVs introduces EVs.

⇒ In such case, subject has to be given IV_1 and IV_2 and then IV_2 and IV_1 → Then average should be taken.

⇒ or $IV_1 \rightarrow IV_2$ to one exp. group & $IV_2 \rightarrow IV_1$ to another exp. group and then taking average.

* When randomisation is used → Independent
" pre-test " " → Matched

Lab Experiment and Field Experiment

*Lab Experiment

*Lab Experiments are the controlled observations carried out within the confines of a lab and acc. to Kerlinger it has 3 purposes.

(i) It aims to discover the relationship bet. IV & DV under pure, uncontaminated and controlled conditions and when this relationship gets established the experimenter is better able to predict DV.

(ii) Lab experiment can help in testing the accuracy of the prediction made by the researcher.

(iii) Lab experiments help in building theories & theoretical systems by refining the theories and hypothesis and providing the ground for

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scientific evaluation of these theories & hypothesis.

Advantages

Q) Relevance of EV in Social Science?

Ans= Exercise of control on EV is very big challenge. If high level control on EV is implemented, artificiality will be introduced in social science research. Thus, most of the cause-effect relationships established are speculative in nature.

Social sciences generally use field exp., field study & survey method. Keeping extraneous variables away in field exp. will be difficult.

Advantages of Lab Experiment

(i) Experimenter is able to enforce administrative control through physical isolation.

(ii) Opportunity for hypothesis testing & theory building present.

(iii) Opportunity for replication present and therefore conclusions reached can be verified again & again.

(iv) The researcher in lab experiment can force the pace of research by making it unnecessary to wait for natural events to reproduce the appropriate scenario. Lab experiment allows the researcher to select when & where to conduct the experiment.

(v) Rigorous control over EV can be exercised IV can be manipulated and DV can be accurately measured and therefore, the lab experiments have high internal validity (purity of cause effect relationship)

[Ext. validity:- generalisation of findings]
(This is more in field experiment)

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*Internal validity & absence of EV

(vi) It is possible to study single discreet variable & its influence on behaviour through lab experiments.

Limitations

(i) Experimenter's bias & demand characteristics may operate to lower the validity of the findings.

(ii) Artificiality of lab experiments makes the generalisation of the findings difficult.

(iii) Cost intensive process of investigation.

(iv) Limited applicability due to practical difficulties in conducting the experiment and as well as because of social & ethical restraints to be observed.

Lab experiment can help us to study efficiently the impact of one or two independent variables on behaviour but these experiments turn out to be difficult to execute when there are many IVs operating on the subject simultaneously.

*Skinner → Lab Exp. → Rats $\xrightarrow{\text{found}}$ Operant conditioning

* Field Experiment

(Zechmeister) has defined field experiment as one in which the experimenter manipulates one or more IV in the settings that resemble naturalistic settings for determining their effect on behaviour.

characteristics of field exp

(i) Because they are carried out in more or less realistic settings, therefore, they are less subject to problems arising due to artificiality.

(ii) They have high external validity and therefore, findings obtained can easily be generalised.

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(iii) Like lab exp., researcher can manipulate IV, control EV and measure DV, though not with the same precision & accuracy as seen in Lab Exp.

Advantages

(i) It is suitable both for theory testing & solving practical problems.

(ii) Field Exps. have high external validity and considerable practical relevance.

(iii) One can study how the variables interact with each other to produce the impact on behaviour.

(iv) Experimental variables (IV) have a stronger impact in field experiments than what is observed in Lab exp.

Limitations

(i) Limited applicability

(ii) The experimenter must have high degree of social skill to deal with the subjects effectively in the field settings.

(iii) The experimenter exercises fewer administrative controls in comparision to lab experiments.

(iv) The control over EV, the manipulation of IV & measurement of DV cannot be as rigorous as is possible in lab experiments.

eg. Robber's Cave Experiment (conducted by Sherif, etal)

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Threats to Internal & External Validity

1) History specific events
(eg. happenings in the interval period bet. experiment sessions might affect performance in next sessions)

→ events occuring bet. first and second experiment and that are beyond the control of the experimenter can dilute the objectivity of the exp. by adversely impacting the behaviour of the subject. This problem to some extent can be overcome if the rest interval is kept short and sufficient precaution is taken to ensure that subjects are not influenced by experiences of any kind that can produce adverse effect.

2) Mortality / (Experimental mortality / attrition
↳ subjects leaving the experiment before it is completed.

reasons → a) fatigue
b) social pressure
c) personal reasons
d) medical reasons
e) ~~Poor~~ ~~Resting~~ decline of interest in the exp.

3) Maturation
↳ it is an EV

↳ If the rest interval bet. experimental testings happens to be long & subjects are witnessing rapid growth, there is every possibility that maturational changes may operate to confound dependent variable behaviour.

4) Pre-testing
↳ (fatigue, carry over effect)
↳ The process of pre-testing ~~at~~ before the beginning of the exp. can produce changes in the subject. It might

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produce practice effect and thus, make the subjects more proficient in their subsequent performance. Sometimes, it causes fatigue which can lower perf. in actual test. Therefore, it is necessary that subjects are not overexposed to testing during their selection for participation in an actual exp. If pre-testing is necessary then it must be ensured that subjects are provided sufficient rest so that they can start afresh when actual exp. is done.

5) Statistical Regression

↳ It is known as regression to the mean or the average. It is the phenomenon that operates when the subjects are selected on the basis of extreme scores & measurement devised is not completely reliable. Subjects who have scored very high in the pretest are likely to score lower (near the mean) on subsequent testing & vice-versa. If this happens, it would produce errors in measurement & therefore, it is recommended that the researcher should avoid such kind of selection.

6) Unreliable Instrument

↳ It can lower the objectivity of experimental finding by introducing the error in measurement.

7) Demand characteristics

Demand characteristics → subjects who participate in the exp.
expectations

Experimenter's bias → experimenter conducting the exp.

- Preconceived notions → behave the way he considers as appropriate & not the way experimental manipulation is
  ↓
  Departure from original behaviour
  ↓
  Threat to Ext. & Int. validity

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* Experimenter is not doing anything to induce demand, but subjects feel the presence of a demand → Demand characteristics

* When experimenter makes a demand → Experimenter's bias (this is unconsciously done by the researcher)
  ↳ researcher will want to prove his hypothesis correct

• Demand characteristics → Hawthorne Experiment by Elton Mayo etal (field exp.)
  ↳ this was the harbinger of human relation movement

→ How working conditions influence productivity?

* IV → light intensity
* DV → Productivity

⇒ When light intensity was poor → low productivity

⇒ " " " became better → productivity improved

⇒ " " " " optimal → productivity further increased

⇒ They again lowered light intensity → Productivity further improved

* workers who participated in the exp → small group
  ↳ excellent relationship with supervisor
  ↳ helped each other

⇒ Working in adverse conditions enhanced togetherness

⇒ Additionaly, they felt that they were being observed → they were encouraged to work more
  ↳ They worked for the sake of supervisor's reputation.

This experiment established the importance of human relations at workplace

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* F.W. Taylor → scientific management
  ↳ elimination of time & motion (no scope for time & motion wastage)
  ⇒ leads to job dissatisfaction

* Hawthorne Exp. highlights the effectiveness of small groups (5-7 members)

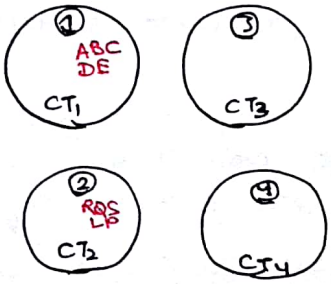
* With improving light intensity, workers realised that they are being observed.

* The exp. failed because relationship bet. performance & light intensity was not established.

* If social life of a worker is given importance → performance improves.

* Experimenter's Bias

Rosenthal & Jacobson → Pygmalion in the classroom
↳ Rosenthal effect
↳ Pygmalion effect



- Bloomers → A,B,C,D,E & [illegible],
- In class 1, teachers were told that A,B,C,D,E, are bloomers (deception)
  ↓
  Teachers behaviour towards students changed
  ↓
  This led to change in students' behaviour.
  (Increase in student's self esteem)

* Golem effect

↳ if students are identified as non-performers
↓
Teacher's behaviour became -ve
↓
performance decreased

⇒ student's behaviour change is not demand ch· as it did not happen on its own.

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* This shows that -ve motivation never works

⇒ This can be used for helping disadvantaged groups in learning.

* Demand characteristics

It refers to the totality of the clues available to the subject which interact with his nature to confound DV (behaviour). The subject tries to behave in a particular manner, no matter what the manipulation is. Demand characteristics have been investigated by Orne who found it to be powerful source of bias in a psychological exp. He observed that subjects entering the psychological experiments have some general notion of what to expect & they act accordingly:

(i) Good subjects try to find out the hypothesis and display behaviour that helps to ~~confirm~~ confirm the hypothesis.

(ii) Apprehensive subjects try to present themselves in a favourable light.

(iii) Negativistic subjects try to behave in a manner that serves to disprove the hypothesis.

(iv) Faithful subjects try to follow instructions meticulously & honestly

* Demand characteristics have been excellently demonstrated in the Hawthorne exp. done by Elton Mayo etal. In their exp., the subjects' expectation that they are being observed resulted in the improvement of performance even when light conditions deteriorated from optimal to sub-optimal.

* How can it be removed:

(i) Automated labs (removes human error)

(ii) single blind procedure
(subjects unaware of the crucial aspects of exp.)

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It is a procedure wherein the experimenter running the exp. is aware about the crucial aspects of exp. but the subjects participating in the exp. are not aware about them.

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Experimenter's bias

It refers to experimenter influencing the outcome by providing subjects cues about his expectations. Perhaps, without realising, the experimenter might provide, subjects the cues without explicitly stating them. Subjects comply with the subtle request and may furnish the data that the experimenter is seeking. The experimenter therefore through his behaviour creates confounding in the exp. Generally speaking, the behaviour of the experimenter is driven by unconscious forces. But sometimes, it might also be deliberate & intentional. Exp.'s bias is not limited to human subjects alone and can be seen in operation with the animal subjects as well. The pressure on the researcher to get the results to validate their hypothesis is enormous and therefore, he is oriented to behave in a manner that may result in generation of the data that is likely to support his hypothesis. This he often does by conveying to the subjects his expectations and trying to mould their behaviour in a manner that favours his hypothesis. There are no. of ways by which experimenter's bias may occur. e.g. the experimenter may make an error in recording the data from the experiment. He might also treat the subjects differently depending upon what he expects from them. He might give more time to the subjects that have gone through a particular treatment. Damaging influence of eb was demonstrated by Rosenthal & Jacobson in their

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study 'Pygmalion in the classroom'
(a greek sculptor who fell in love with his own image)

It demonstrated that the teacher's preconcieved notions about the ~~teach~~ student's ability resulted in IQ scores to move in ~~an~~ expected direction. Although the students themselves had not significantly changed

* Self Esteem ↑ ⟶ better performance (Rosenthal)
* Self Esteem ↓ ⟶ worse " (Golem)

*How to overcome experimenter's bias

1) Automated Labs
2) Double blind
   ↳ even the experimenter is not aware of the crucial aspects of the experiment
   ↳ So, both the subjects & the experimenter are not aware

It is a procedure where neither the subjects nor the experimenter happen to know about crucial aspects of the hypothesis or the treatment administered to the subjects.

⇒ Experimenter does not know which group has been given IV & which group has been given Placebo but experimenter knows the hypothesis.

Threats to External Validity

(i) Artificiality
(ii) Interference of the prior treatment
   ↳ In some experiments, the effect of one treatment may carryover to subsequent treatment and this may dilute the objectivity of the experiment.

Ext. validity will be more if control over Demand characteristics ~~are~~ is good.

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(iii) Extent of treatment verification

↳ Due to the potential threat of exp's bias, most researchers have research assistants who are not directly involved in the formulation of research hypothesis, deliver treatment to the subjects. This can be a potential threat to Ext. Validity as the question can always be asked that whether the treatment administered was in accordance with directions given by the experimenter. The experimenter therefore must have verification procedure to make sure that the treatment was properly administered

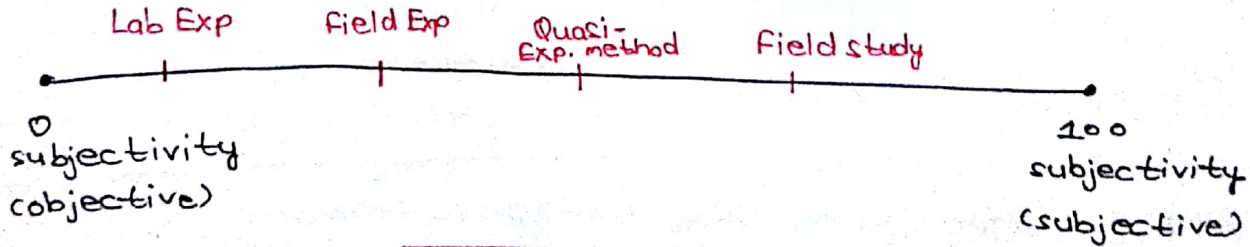
(iv) Interaction effect of testing

The use of pretest at the beginning of the study or the exp. may sensitise the individual and this may lead to the departure from original behaviour.

(v) Interaction of selection & treatment

Researchers are rarely if ever able to randomly select the sample from the population of those interested or randomly assign them into groups. This implies that generalisation cannot be effectively made due to the biased nature of the sample.

Quasi Experimental Method



→ increasing Ext. Validity

→ decreasing Demand characteristics, IV manipulation, EV control, DV measurement & Int. validity

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Q) How is Quasi-exp method diff. from True exp.?

Ans= (i) Complete manipulation of IV not possible (or objective)

(ii) Not possible to randomly allocate the subjects to different groups.

True Exp not always possible → (i) ethical & social reasons
(ii) Time, cost & labour factor
(iii) Manipulation of IV very difficult or not possible

eg. Tribal group Hopi

(i) Tying infants to cradle
(ii) Not tying [non-equivalent control group]

[Dennis & Dennis]
Study:- Locomotion behaviour in human infants → maturational or not (free from influence of env.)

Now, here 2 groups are not equal & not randomly allocated

After 14 months → children of both groups run with same speed. Hence, it is maturational

In non-experiment method → observe the behaviour & then study the history to establish cause-effect relationship (high speculation level)

Here, quasi-exp. method is diff. from non-exp. method (level of speculation relatively lesser)
↳ presence of control group (non-equivalent)

*Quasi Exp. is sometimes also called as Natural Exp.

→ Othello village (Pre-test) before volcanic eruption → Volcanic eruption (St. Mount Helens) → Post test

→ Buffallo village (Pre-test) → No Volcanic eruption → Post test

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* IV Manipulation (Volcanic eruption) not in our hands.

*Quasi Experimental Designs

1) Non equivalent Post-test only design

Grp I + Treatment ⟶ Post Test ↖
                                  } comparision
Grp II + No Treatment ⟶ Post test ↙

2) Non equivalent Pre-test Post-test design

Non eq. { Group I ⟶ Pre-test + Treatment ⟶ Post Test ↖
        { Group II ⟶ Pre-test + No Treatment ⟶ Post Test ↙ } comparision

⇒ Pre test :- adds the scope of Demand characteristics

3) Time series design

Group + Treatment ⟶ Post Test I Post Test II Post Test III

Pre-test I
Pre-test II
Pretest III

⇒ Series of pre & post tests on a single group over a time range.

⇒ Diff. deg. of manipulation of IV can be used

4) Non equivalent before & after design

Group I ⟶ Treatment ⟶ Post-test I, II, III
Pre-test I, II & III

Group II ⟶ No treatment ⟶ Post-test I, II, III } comparision each time
Pre-test I, II & III

(Non-equivalent groups)

(i) We can never say that cause-effect relationship is free from EV (non. eq. groups)

(ii) IV manipulation will have constraint / restraint

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Adv.

(i) High Ext. Validity (free from demand characteristics)

(ii) ↑ CL effective (cost & labour) → no labour to set things equal

(iii) what cannot be studied for ethical & social reasons, can be studied here

Research & its characteristics

Research is the systematic application of the family of methods to provide trustworthy info. about the problem. It can be defined as ongoing process based on many accumulated understandings and explanations that when taken together lead to generalisations about the problem & dev. of theories.

Kerlinger has defined research as a systematic, controlled and critical investigation of hypothetical propositions about presumed relations among natural phenomena.

Characteristics of research

(i) It is directed towards the solution of the problem.

(ii) It is based upon empirical & observable evidence

(iii) It includes precise observation and accurate description

(iv) It is marked by patience, courage and resilience and unhurried activities.

(v) It emphasises on the development of theories, principles and generalisations which are very helpful in the accurate prediction of the variables of interest and relevance.

(vi) It requires that researcher has full experience over the problem being studied.

(vii) Research should be replicable so that other individuals can also assess the validity of the research.

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(viii) It requires the skill of writing & reproducing the report

Steps in Research

(i) **Definition of the problem or prob. Identification**

The researcher describes the problem & gives it an operational definition which specifies the terms in an experimental hypothesis acc. to the actions & operations taken up by the scientist to make an observation.

(ii) **formulation of hypothesis**

Hypothesis is a kind of suggested answer to a prob. and can be defined as a tentative statement showing the relationship among the variables under study.

(iii) **Identification of crucial variables**

These include IV, DV & EV

(iv) **formulation of a research design**

Research design is a blue print of the procedures which are adopted by the researcher for testing the relationship bet. IV & DV. RD helps the researcher to manipulate IV freely & provide for max. control over EV.

(v) **Construction of the devices for observation & Measurement**

The 2 popular devices are:

(i) questionairres

(ii) Interviews

(vi) Summarising the result so that suitable analysis can be made

(vii) Carrying out a statistical analysis.

(viii) Drawing conclusions

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Types of Research

(i) Pure & Applied
(ii) Diagnostic & Prognostic
(iii) Descriptive & Evaluative

(i)
- Pure research → develop a theory (fundamental research)
  → give the report in technical sample
  → utilize the sample

⇒ When pure research theory → applied to practical setting
⇓
Applied Research

⇒ Action Research → local & immediate applicability

⇒ Program Evaluation is a part of Applied Research

(iii)
- Descriptive → Describe what is and not what ought to be
  eg. Malinowski's exp.

→ Normative ethics → Teleological & Deontological
→ Non-normative ethics → Descriptive & meta (no evaluation)
→ Applied ethics

*Non-normative → what is
*Normative → what ought to be

⇒ Descriptive research is non-experimental method

⇒ Evaluative → value judgement
→ Did it work? how well it worked?

Submative Evaluation :- result is evaluated
formative Evaluation :- evaluation of every step

eg. Evaluative Commissions of the govt.

(ii) ~~Diagnosis~~ Diagnosis → Reach a conclusion by ruling out certain possibilities.

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⇒ Symptoms → etiology → Diagnosis

→ frequency with which something occurs is a part of Diagnostic research.

↳ eg. Freud's work on frowline Elizabeth

- Prognostic → forecasting
  ↳ steps to be taken for future improvement are told to patients

Field Study

(i) Non-experimental Research Method

IV — Manipulation
EV — control
} not possible
DV — measurement Difficult

(ii) Ex post facto method of enquiry
↳ from the behaviour to the probable causes

(iii) ↑ External validity (High)

(iv) where ethical & social ~~reseaor~~ reasons do not allow lab exp., field study can be used

Field study → (i) Exploratory field study
→ (ii) Hypothesis testing field study

Q) How is field study different from ~~Non~~ Field - Exp. ~~method~~?

FS	FE
(i) Non-experimental	(i) Experimental
(ii) External validity higher	(ii) High Ext. Validity but lower than FS
(iii) Cause-effect relationship speculative	(iii) Empirical cause-effect relationship can be established
(iv) Less cost	(iv) More cost
(v) Easier to conduct	(v) Tough to conduct

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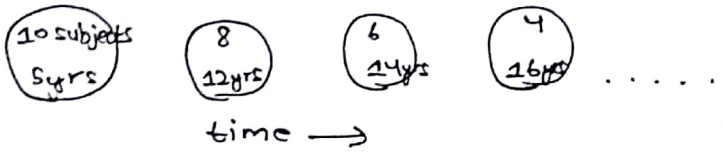
FS	FE
eg) Malinowski	eg. → Hawthorne → Robber's cave

Longitudinal vs Cross sectional Research

⇒ longitudinal

Mass media impact



Adv.

(i) continuity in research
(ii) Subjects act as their own control

Disadv.

(i) Attrition
(ii) Biased assimilation
↳ people coming for research again & again do not represent general population
(iii) cohort effect

Cross-sectional

At the same time

⇒ But subjectects are not comparable

⇒ **Longitudinal** → it measures the changes in behaviour of a group of subjects more than one point in time. In this method, the group of subjects are repeatedly studied at diff. stages & changes that occur as they mature are noted. This research is conducted to examine age related changes over an extended period of time.

Advantages of longitudinal research

(i) It enables the researcher to examine relationship bet. early and later life events & behaviour

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(ii) It is a unique method as it enables the researcher to track the performances of the subjects over time.

(iii) This method allows for cause-effect speculation about the relationship between the variables under investigation.

(iv) Since, same set of people are studied for more than one point in time, there therefore, subjects act as their own control.

Disadvantages

(i) Experimental mortality or attrition → loss of subjects over time

(ii) Time, cost & labour intensive method

(iii) Practice effect → Natural response of the subject get altered due to repeated testing

(iv) Biased Assimilation

↳ As the research progresses, the sample gets biased further & further.

(v) Cohort Effect

↳ It refers to the effect of cultural & historical changes on the accuracy of the findings. Children born in a particular period are influenced by a set of cultural and historical conditions. Research based on such children cannot be applied to a group of other children growing up under diff. set of socio-cultural conditions.

*Cross-sectional

It examines several group of people at one point in time. In other words, subjects of diff. age groups are studied at the same point of time. This research is used to examine age-related differences

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and how these differences influence behaviour.

Advantages

* Time, cost & labour effective method

Disadvantages

(i) Lack of ~~compat~~ comparability among the group. The ~~Res~~ researcher to conclude that age related change has occured has to make unwarranted assumption that the behaviour of the younger subjects reflects what the older subjects were like when they were in their age group.

(ii) The research tells us nothing about the continuity of development on person by person cases

Grounded Theory-

1) qualitative research design

2) Theory emerges from the data → also called as emergent theory
(Theory is grounded in the data)

→ construction of the theory is through the analysis of the data.

3) Reverse Engineered Hypothesis

4) Uses Inductive rather than hypothetico-deductive approach

↳ rather than starting with developing ~~the grounds~~ a hypothesis, the focus is on data collection through variety of methods

→ Focus on discovery rather than verification (diff. from exp. method)

→ constant comparision is a feature of grounded theory

⇒ Glasser & strauss ('Discovery of Grounded Theory')

⇒ It is a bottom up approach

* In field study → no comparitive analysis but in grounded theory development, comparision is involved

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→ Freud's work is example of grounded theory approach.

→ Piajet's work → stages of cognitive development

⇒ (i) Codes
(ii) Concepts
(iii) Categories
(iv) Theory

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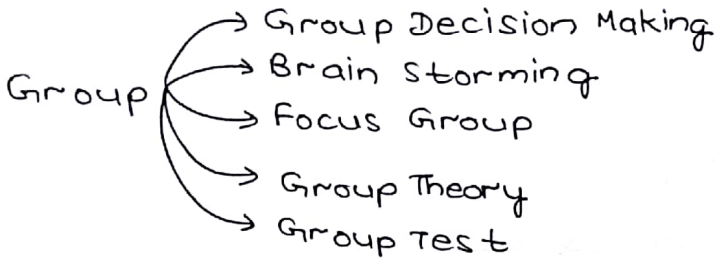

* Group → Small group (8-10 members)

Advantages

(i) economical
(ii) Resembles real life settings
(iii) Group can provide motivation to contribute
(iv) Divergent ideas
(v) Larger information base
(vi) self esteem improves (if you contribute to the group)
(vii) An idea taken by group is easy to implement
(viii) Members will get an identity to cherish
(ix) Greater synergy & sometimes greater spontaneity

Disadvantages

(i) conformity pressure
(ii) Domination by few
(iii) subgroup within a group
(iv) off track
(v) Getting the group to assemble together is difficult
(vi) Difficult to make the group homogeneous (members who have the capability & capacity to contribute)
(vii) Getting the members to open up

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(viii) Comprehending & collecting information in accordance with the frame of reference provided by the participant.

* The 2 imp people
1) Moderator
2) Idea collector → info. should be collected in the participants perspective

→ This includes semantic & psychological barrier bet. moderator and idea collector and the participants.

Irving Janis → Group Think

(ix) Evaluation apprehension

In group (we) → person finds heterogenity
Out group (They) → " " homogenity (to support his/her stereotypes)

⇒ 'Out group' is generally the people you don't like.
⇒ 'Out group' homogenity is not desirable → it leads to stereotypes

* Brain Storming
(Developed by Osborne presented in his book 'Applied Imagination'
→ It is creative solution finding technique
→ Evaluation & Imagination cannot go together

Principles

i) Deferred Judgement (DJ)
↳ don't make judgement
ii) Quantity begets quality
iii) No criticism (NOC)
iv) Combination & Improvement of the ideas is sought
↳ when all the ideas have been collected, then analyse them.

It requires:
(i) small group (ii) Moderator (iii) Idea collector
(iv) Participants

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*Moderator ensures:

(i) participants open up

(ii) they do not go off-track

(iii) Deadlock is broken

*Idea collector collects the ideas

* Generally, brain storming session is of 40-45 min

*In any Brain storming session, we allw unconscious to dominate conscious.

*Focus Group

A focus group interview is a structured group process conducted for the purpose of obtaining detailed info. about a particular topic, product or issue. Focus group discussions are useful when the evaluator does not know precise issues that would permit a more specific research technique such as sample survey. In this regard, focus groups are useful in early stages of enquiry to gather data & to lay a groundwork for more precise evaluation methods. FG involves research in which a group of people are asked about their perceptions, opinions, beliefs and attitudes towards a product, service or an idea. Questions are asked in an interactive group setting where participants are free to talk with other group members.

The idea of FG was generated by a sociologist Robert K. Merton to apply to a situation in which interviewer asks group members very specific questions about a topic after considerable research has already been completed.

Acc. to Kreuger, focus group can be defined as carefully planned discussion designed to obtain perceptions in a defined area of interest in a permissive, non-threaten

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FG allows the interviewers to study people in more natural conservation patterns than typical occurs in one-to-one interview. In combination with participant observation, they can be used for learning about groups and their patterns of interaction.

Focus group holds advantage over the surveymethod in that:

(i) They are cost effective & produce results quickly.

(ii) They provide opportunity to speak to several people at once.

(iii) They can be used as an occasion for participants to learn from one another as they exchange & build on one another's views, so that participants can see the research as an enriching encounter.

In the world of marketing, focus group are seen as an important tool for acquiring feedback regarding new products as well as other topics. In marketing, focus groups are usually used in early stages of product or concept development when organisations are trying to create an overall direction for marketing initiative. Focus group allows companies to test market for a new product and test the new product before it is made available to the public. This can provide valuable information about the acceptance of the product.

* Method of focus group

The group consists of participants, moderator & a recorder. Generally, the group consists of 6-12 people. The goal is to get as much information on the given topic as possible. Open discussion is encouraged under the condition of complete confidentiality. Group interaction is used to probe & bring out additional information.

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The moderator stimulates the discussion & keeps it on course. Both concrete information & opinions are considered relevant & every response is considered valid. There is no attempt to support or criticise any response or address any individual problem or reach any conclusion. The attempt is to gather as much information from as many different viewpoints possible.

* Steps in Focus Group Process

1. Formulate the research question
2. Identify the moderators. The moderators have to assume different roles.
3. Generate pre-test & revise the interview guide. The questions are ordered from general to specific and the more important questions are placed at the top of the guide and those with lesser importance, towards the end.
4. Develop the sampling frame. It will help decide the type of people who will participate in the group.
5. Recruit Participants
6. Make arrangements for the settings, equipments, etc.
7. Schedule & conduct the groups using suitable recording device.
8. Prepare the data & analyse it.
9. Report

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Advantages

(i) Relatively easy to undertake

(ii) Time & cost effective

(iii) Social interaction within the group produces more freer & complex responses due to interactive synergy.

(iv) The researcher can probe for clarification or greater detail and unanticipated but potentially fruitful lines of discussion can be pursued.

(v) Responses have high face validity due to clarity of context.

(vi) Focus group can work well with any particular population & also with a diverse population.

Disadvantages

(i) Focus group moderators must be trained at stimulating & managing a guided group discussion. Such moderators are difficult to find.

Qualities of moderator →
- (i) Rapport building
- (ii) Alert & observant
- (iii) Mental & physical strength
- (iv) Ice breaking capability
- (v) Be informed about the topic under discussion

(ii) Groups are difficult to assemble.

(iii) Responses produced are not independent of one another.

(iv) The evaluator has less control than in an individual interview

(v) Because participants are randomly sampled from the population, the evaluator cannot freely generalise from the results.

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(vi) There is a great deal of specific info. Some of it very tangential to the topic making analysis & the summarisation of results difficult.

* Survey Research

(i) Survey Interview

(ii) Questionairre

(iii) Panel technique

(iv) Telephone survey

⇒ Survey Research eg. Census

⇒ Visit each member of population & collect data from them.

⇒ A sample is selected → size → large
(This sample should be true representation of the population) → randomly selected } ⇒ Sample Survey

(i) Survey Interview

(view between literally)

↳ a conversation with a purpose & the purpose is to collect information from the subject(s) with minimum bias and maximum efficiency & effectiveness

→ Interviewer & Respondent

(i) present questions in a manner that they can be effectively & objectively comprehended by the subjects.

(ii) should be able to provide the subjects motivation to provide the answer.

(iii) Interviewer should not be influenced by any kind of bias.

Halo Effect & Hall Effect
(one quality affecting the whole judgement about a person)

* Interviews are of 3 types

(i) structured → all parameters like no., type of questions pre decided

(ii) Unstructured

(iii) Semi-structured

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*Unstructured eg. clinical interviews

*Semi-structured → areas of discussion, time & scoring are decided but the interviewers can go in-depth if the want.
eg. Civil services Interview

*Questionairre

↳form containing questions

(i) open-ended

(ii) close-ended
↳used in survey method

Adv.

(i) widely scattered pop. can be reached
(ii) free from bias
(iii) T, C, L effective
(iv) well defined scoring method
(v) Participant have time to think & answer

Disadv.

(i) Semantic barrier (miscomm. due to language)
(ii) Independence of the response is compromised (as subjects will read all questions before answering)
(iii) close ended → subject cannot add anything on their own
(iv) No opportunity to supplement the info. with background data. Non-verbal attributes cannot be analysed.
(v) The person who has answered the question is the one it was intended for. Also, Subject version is the last word → You cannot ask the reason for an answer
(vi) Non-response

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17-Dec-2018

* Panel Technique

⇒ Re-interview design

I IV $\xrightarrow[\text{days}]{15}$ II IV $\xrightarrow[\text{days}]{15}$ III IV

* Telephone Survey

Questions asken on the telephone.

Learning

1) classical Conditioning — 20
2) Instrumental conditioning — 20
3) Schedules of reinforcement — 15
4) Comparison IC vs CC — 10
5) Cognitive Learning — 20
6) Gestalt Approach — 10/15
7) Information Processing Approach — 10/15
8) Programmed Learning — 20
9) Discrimination — 10
10) Extinction — 10
11) Discrimination Learning — 15
12) Tolmen's cognitive Learning Theory or Sign Gestalt Theory — 15
13) Generalisation — 10
14) Probability Learning — 10

Learning → Relatively permanent change in behaviour that occurs as a result of practice or experience.

⇒ This definition was given by behaviourists

* (i) Learning involves change → good
→ bad

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